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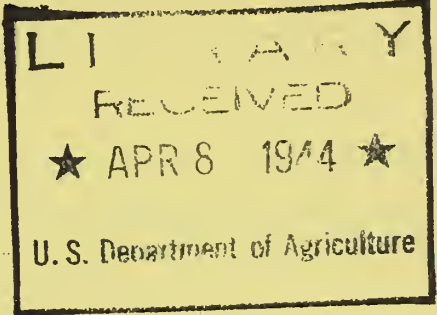
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SOIL CONSERVATION LITERATURE
SELECTED CURRENT REFERENCES

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May/June, 1938

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"The soil is the one indestructible, immutable asset
that the Nation possesses. It is the one resource that
can not be exhausted; that can not be used up."
- Milton Whitney

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Mildred Benton
Librarian.

PERIODICAL ARTICLES

Agronomy Program

Stewart, T.G. The correlation of the extension agronomy program with the related programs of the Soil Conservation Service, the Farm Security Administration and the Agricultural Adjustment Administration. Jour. Amer. Soc. Agron. 30(3):189-192. March 1938.

The author is extension soil conservationist, Extension Service, Fort Collins, Colorado.

Black Locust

Meginnis, H.G. Effect of depth of sowing on nursery yields of black locust. Jour. Forestry 36(4):411-416. April 1938.

"With the development of the soil conservation program black locust has become a very important species. The yield of seedlings from a given number of black locust seed is notoriously low. Although few data have been available, it has long been suspected that the depth at which the seeds are planted affects the seedling yield. The results obtained by Mr. Meginnis [of the Southern Forest Experiment Station] seem to justify the recommendation that black locust seed be covered 1/4-1/2 inch when grown under conditions comparable to those under which the study was made."

Contour Farming

Barger, E.L. Power, fuel and time requirements of contour farming. Agr. Engin. 19(4):153-157, illus. April 1938.

Presented before a joint session of the Soil and Water Conservation and Power and Machinery Divisions of the American Society of Agricultural Engineers, Ohio., Ill., Dec. 2, 1937.

Contribution no. 85 from Department of Agricultural Engineering, Kansas State College.

Reports results of tests made at Manhattan and Hays, Kansas during July and August 1937 to obtain comparative data on contour and up-hill and downhill farming practices.

Dust Storms

Martin, R.J. Duststorms of May-December 1937 in the United States. U.S. Mo. Weather Rev. 66(1):9-12. January 1938.

Engineering

Ayres, Q.C. Engineering in erosion control. A brief survey of principles and possibilities in an expanding field. Civ. Engin. 8(4):240-242, illus. April 1938.

The province of the engineer in erosion control as distinct from the agronomist or the forester is outlined here.

Engineering - Continued

Ayres, Q.C. Relationship between engineering and agronomic practices in soil and water conservation. Agr. Engin. 19(4):167-169. April 1938.

Presented before the Soil and Water Conservation Division, American Society of Agricultural Engineers, Chicago, Ill., Dec. 2, 1937.

Evaporation

Small earthen storage dams. Rhodesia Agr. Jour. 35(1):40-55. January 1938.

Information issued by the Irrigation division, Rhodesia as to suitability of dam sites, foundation construction, catchment area, flood spillway, capacity of impounding basin, and evaporation losses from free water surfaces.

Ursulov, A.N. The evaporating capacity of the different structural fractions of soil. Pedology no. 4, 1937(567-579)

In Russian. English summary.

"Structural aggregates of soil (2-3 mm. in diameter) evaporated less moisture in calm weather than smaller aggregates. Evaporation depends on the moisture content and is greatest when the soil is saturated to 70-100 per cent of its capillary water capacity."

Floods and Flood Control

Adams, F.P. Flood control and water conservation in southwestern Ontario. Engin. Jour. 21(2):71-77, illus. February 1938.

Paper presented at the annual meeting of The Engineering Institute of Canada in London, Ont., Feb. 2, 1938.

After sketching the geology and physiography of the Thames and Grand river watersheds, the paper outlines the history of flood control and conservation works in the district and the proposals for further construction, with a brief general discussion of river control methods.

Eiffert, C.H. and Bennett, C.S. Sixteen years of flood control in the Miami valley. Civil Engin. 8(5):343-345, illus. May 1938.

"The present article is a composite abstract, brought up to date, of two papers that were presented at the ninth district convention of the American Society of Civil Engineers, Dayton, Ohio, October 1937."

Reviews briefly the principal features of Miami valley flood control project and examines the record of operation over the past 16 years.

Federal agencies to make survey of recent floods in California. Data sought for guidance of engineers, work to be directed by Geological Survey. Southwest Builder and Contractor 91(14):11. Apr. 8, 1938.

"The information to be gathered will include: a detailed discussion of the weather conditions associated with the floods; records of flood heights and discharges at river measurement stations throughout the critical flood rises; flood discharges which will show the peaks for December and March, and dates and amounts of previous maxima, for comparison; crest stages of the floods at frequent intervals along all flooded streams; review of available information

Floods and Flood Control - Continued

Federal agencies... - continued

regarding previous notable floods with a view of making such information readily available for future use; general studies of the rain-fall, run-off, and other features of the floods with a view to providing a more exact knowledge of flood potentialities and adequate protective measures."

Fletcher, E.H. Floods in the Sacramento valley, Calif., December 1937. U.S. Mo. Weather Rev. 65(12):441-444. December 1937.

Flood-protection data. Progress report of the committee. Amer. Soc. Civil Engin. Proc. 64(2):333-340. February 1938.

Report of the Committee on Flood Protection Data, American Society of Civil Engineers, Gerard H. Matthes, chairman.

Refers to a number of outstanding publications on flood control issued during the year.

Mohr, L.G. Soils mechanics in flood control. Cornell Engin. 3(2): 33-37, illus. November 1937.

Grassland Ecology

Hanson, H.C. and Whitman, Warren. Characteristics of major grassland types in western North Dakota. Ecol. Monogr. 8(1):59-114, illus. January 1938.

"Literature cited," pp. 113-114.

The major types classified were 1) grama-needle-grass sedge, 2) western wheatgrass-grama-sedge, 3) little bluestem, 4) sandgrass, 5) sagebrush, 6) saltgrass western wheatgrass, 7) saltgrass-alkali meadow grass, 8) buffalo-grass, 9) big bluestem.

Hanson, H.C. Ecology of the grassland. Bot. Rev. 14(2):51-82. February 1938.

"Literature cited," pp. 77-82.

"This paper has been limited chiefly to a discussion of the nature of the characteristics that are classified under the category of floristics and structure of the community. Methods of studying these characteristics and applications of the methods in grassland research have been described and evaluated. The four other categories of community characteristics, namely, environmental relations, geographic distribution, plant succession and processes involved, and classification are not considered in detail."

Great Plains

Advisory committee formed for northern Great Plains. U.S. Bur. Agr. Econ. Land Policy Circ., April 1938, pages 4-5.

W.H. Brokaw, Director of Extension at the University of Nebraska, was named chairman. Elmer A. Starch will be secretary and represent the Department of Agriculture in coordinating its activities in the Northern Plains region.

"Although the Northern Plains does not present the serious wind erosion problem found in other portions of the Plains, some soil blowing has already occurred in the northern area, and recent droughts have intensified problems of relief, rehabilitation, and land utilization."

Great Plains - Continued

Department cooperates in North Dakota land use study. U.S.Bur.Agr. Econ.Land Policy Circ.,April 1938, page 4.

"Participation by the Bureau of Agricultural Economics with the Soil Conservation Service,the Office of Land Use Coordination,and other interested Bureaus of the Department in the formulation of an immediate program for the development of land and water resources in the Northern Great Plains is a recent significant step in the field of land-use planning."

Green Manuring

Bell,A.F. Crop rotation,with special reference to the principles of green manuring. Aust.Forestry Jour.29(12):719-724. Mar.12,1938.

Highway Erosion Control

Curtis,O.B. Soil erosion control in roadway cuts to improve ditch sections. Miss.Highways 6(12):11-12. March 1938.

Davis,Arnold. Highway erosion control demonstrations. Dixie Contractor 11(32):6. Feb.16,1938.

Describes demonstration projects in Texas,Arkansas and Louisiana.

Simons,C.E. Saving the soil.Controlling erosion on the Texas road system. Texas Parade 2(10):14,29-30,illus. March 1938.

Tells of the inception and progress of erosion control methods along Texas highways.

Humus

Waksman,S.A. Humus and soil conservation. Soil Conserv.3(10): 250-254,illus. April 1938.

Implements and Machinery

Barger,C.E. Sod furrow plow. Country Gent.108(5):86. May 1938.

Describes contour furrowing plow,designed by Xzin McNeal,which lifts up the sod and topsoil,makes a ridge beneath,and then drops undamaged sod back in place.

Infiltration

Laatsch,Willy. Die durchfeuchtungswerte der deutschen sandböden. (The infiltration values of German sandy soils.) Ernähr.Pflanze 34(1) :3-8,illus. Jan.1,1938.

"Describes lysimeter studies in which the infiltration value - the difference between precipitation on and evaporation from a soil is measured.This value appears to be a better criterion of the conditions in the soil than other standards,such as NS quotients,etc." Soils and Fert.1(1):16. 1938.

Legumes

Blackmon, G.H. The value of legumes in pecan production. Peanut Jour. and Nut World 17(5):13, 26-27. March 1938.

Discussion based on experiments at the Florida Agricultural Experiment Station.

Table I gives effects of winter legumes on the yield of pecans growing on Norfolk fine sandy loam soil at Monticello, Florida.

Chapman, G.T. End erosion with legumes. Hoard's Dairyman 83(9): 266. May 10, 1938.

The writer tells of his experience with raising alfalfa in Arizona and New Mexico. It is his belief that alfalfa is one of the best crops for the arid or semiarid regions.

Lysimeters

Riesbol, H.S. and Sherman, G.L. Watercycle lysimeters for watershed studies. Agr. Engin. 19(3):123-128, illus. March 1938.

Presented before Soil and Water Conservation Division, American Society of Agricultural Engineers, Chicago, Ill., Dec. 2, 1937.

Design and construction of lysimeters adapted to the detailed analysis of the hydrologic cycle in its relation to watershed studies devised on the North Appalachian experimental watershed by the U.S. Soil Conservation Service.

Plant Diseases

Edson, H.A. and Wood, J.I., comp. Diseases of plants in the United States in 1936. U.S. Bur. Plant Industry. Div. Mycology and Disease Survey. Plant Disease Reporter Dec. 31, 1937, pages 123-244.

Issued as Supplement 103.

Includes weather data, diseases of cereal, forage, cover, fruit, nut, vegetable, tree and ornamental crops and plants.

Rainfall and Precipitation

Determination of rainfall. Establishment of standard methods of measurement. Surveyor 92(2395):765-767. Dec. 17, 1937.

Review and excerpts from report of joint committee consisting of representatives from the British Rainfall Organization (Meteorological Office, Air Ministry) the Royal Meteorological Society and the Institution of Water Engineers.

Minser, E.J. and Hathaway, G.A. Synoptic analysis of some excessive rainfalls in the Mississippi basin due to squeezing of tropical air between anticyclones. Bul. Amer. Met. Soc. 19(1):34-42, illus. January 1938.

"Paper read at Washington, meeting, American Meteorological Society, April 1937. This is part of a much larger study made by the authors under the U.S. Engineers in connection with plans for various river dams in the Mississippi."

"The primary object of this investigation... was to determine whether or not excessive rainfall could occur over any portion of

Rainfall and Precipitation - Continued

Minser, E.J. and Hathaway, G.A. - continued

the Mississippi river watershed. Since it is determined that such excessive rain is dependent upon meteorological factors alone, orography being but a contributing factor, the findings are in the affirmative."

Range and Pasture Management

Aldous, A.E. Management of Kansas bluestem pastures. Jour. Amer. Soc. Agron. 30(3):244-253. March 1938.

Gives results and data of studies undertaken at the Kansas Agricultural Experiment Station.

Currie, J.H. Ladino to the rescue. Country Gent. 108(5):12, 82, illus. May 1938.

Value of ladino throughout California, Oregon, Idaho and Washington. It is essentially a pasture crop though in some states it is also cut for hay.

Although largely confined to the irrigated lands of the Pacific coast and Intermountain states, it is reported that this crop may become important in the humid eastern states when soil conditions are made ideal for its growth and when the fields are properly managed.

Is Sudan grass a safe crop? Tests now indicate some danger in using pasture before growth is well up. Wallaces' Farmer and Iowa Homestead 63(10):337, illus. May 7, 1938.

Lommasson, Tom and Jensen, Chandler. Grass volume tables for determining range utilization. Science 87(2263):444. May 13, 1938.

Announces development of tables by U.S. Forest Service staff members in Montana. A full account of this work will be published later.

Schaffner, J.H. Spreading of opuntia in over-grazed pastures in Kansas. Ecology 19(2):348-350. April 1938.

Cites rapid spreading in recent years of the prickly pear and the consequent serious farm problem arising.

Run-off

Marr, Norman. Surface run-off in the Thames and Grand river basins in Ontario. Engin. Jour. 21(2):60-65, illus. February 1938.

Paper presented at the annual meeting in the Engineering Institute London, Ontario, Feb. 2, 1938.

"The author presents for reference the available records of run-off in the basins of two rivers in southwestern Ontario, which are liable to extreme variations of flow, and have total drainage areas of 2,250 and 2,610 sq. mi. respectively.

Soil Analysis

Carroll, Dorothy. Recording the results of heavy mineral analyses. Jour. Sedimentary Petrology 8(1):3-9, illus. April 1938.

"References," p. 9.

"This paper describes the technique adopted for the mineralogical examination of soils, and discusses and illustrates methods for the presentation of the data."

Soil Conservation.

Allred, D.H. Districts for soil conservation. Jour. Land & Pub. Utility Econ. 14(1):91-94. February 1938.

Details of provisions, operation and financing.

McCall, M.A. The relation of the national agricultural program to agronomic betterment. Jour. Amer. Soc. Agron. 30(3):171-178. March 1938.

The author cites examples of the effects of A.A.A. impacts on agronomic betterment. He is of the opinion that "the A.A.A. has contributed, and is contributing, in a very substantial way to advancements in soil conservation and crop practice" and that "it is without question a most potent force for implementing soil and crop science."

Myer, D.S. Soil conservation districts. Agr. Engin. 19(3):111-113, illus. March 1938.

Presented before the Soil and Water Conservation Division, American Society of Agricultural Engineers, Chicago, Ill., Dec., 1, 1937.

Calls attention to three "important milestones" in our national progress toward better use of land and water resources, namely the passage of soil conservation districts laws, the so-called Omnibus Flood Control Act, and the Water Facilities Act.

Indicates how the Soil Conservation Service is cooperating in carrying out the provisions of these acts.

Van Dersel, W.R. Shrub borders for woods. Protective planting for woodland provided by shrub border. Amer. Nurseryman 67(7):18. Apr. 1, 1938.

The author lists four classes of plants valuable for borders which not only offer protection for wild life but also for woodland edges where plantings are used to conserve soil.

Soil Erosion and Control. Foreign Countries.

Coster, C. Typen van stervend land in Nederlandsch-Indie. 3. Het Tjikeroeh gebied (Types of dying land in the Dutch Indies. 3. The Tjikeroeh region) Tectona 30(1/2):155-157, illus. Jan/Feb. 1937. Article in Dutch.

The upper basin of the river Tjikeroeh furnishes an example of catastrophic gully erosion at the beginning of the century and deforestation on a large scale during 1917 and 1918, years of scarcity of fodder.

Gorrie, R.M. Reclamation in the Pabbi hills, Gujrat district, Punjab. Indian Forester 63(5):285-296, illus. May 1937.

Summary - "The Pabbi Hills are a deeply eroded line of low foothills in the northwest corner of Gujrat District, Punjab with arid conditions and a precarious rainfall of a few heavy thunderstorms each monsoon. The range is 30 miles long and exhibits all stages of grazing damage between long-continued closure and persistent overgrazing. The run-off in terms of maximum peak flood has been measured by the Irrigation Branch during the last 30 years for a great many individual torrents, and the records thus obtained have been correlated with catchments conditions. The results show clearly the value of constructive counter-erosion work to supplement passive protection against grazing.

"An historical account is given of the reclamation work which has been carried on intermittently since 1877 and is now effectively controlling run-off over 3,000 acres. Suggestions for future work include stricter grazing control, land acquisition, gully plugging, contour trenching, afforestation and improvement of farm cultivation by stream training and contour terracing."

Hartley, B.J. An indigenous system of soil protection. East African Agr. Jour. 3(5):390-391. March 1938.

Describes in detail the method of soil conservation evolved by the Erok people of Mbulu District, Tanganyika Territory. Terraces are extensively used.

Huxley, Elspeth. Erosion. II. Man the desert maker. Geogr. Mag. 6(5): 297-312, illus. March 1938.

A survey of erosion in foreign countries.

Nye, G.W. Preliminary notes on the use of elephant grass as a fallow crop in Buganda. East African Agr. Jour. 3(3):186-190. November 1937.

It is stated that the mass of stems and root stocks form a complete protection against soil erosion for at least a year after the land is reopened.

Soil conservation problems at the other end of the world. U.S. Off. Indian Affairs. Indians at Work 5(9):28-32. May 1938.

Impressions of problems of soil erosion and overgrazing in Southern Rhodesia left by Douglas Ayles, Soil Conservation Assistant for the Southern Rhodesian Government, during his visits to Washington.

Stebbing, E.P. The man-made desert in Africa. Erosion and drought. Jour. Roy. African Soc. Suppl. 37(146):1-40. January 1938.

The author regards erosion primarily from the point of view of its effect on water supplies and believes that with increasing erosion, a falling water-table and decreasing water supplies, the character of the rainfall deteriorates, wet years becoming less and droughts more frequent, and of longer duration.

Much of Africa seems to have entered upon a critical stage of deterioration and the situation is said to require immediate action. It is intimated, however, that until the Administration has tried out soil conservation programs it is difficult to tell whether or not they are compatible with plans for the harmonious social development of whites and blacks.

Summary under title "Desiccation in Africa" in Nature 141(3571): 639. Apr. 9, 1938.

Throssell, G.L. Soil drift reclamation by means of lupins. Jour. Dept. Agr. West Aust. 14(4):394-400, illus. December 1937.

Describes how two cases of soil drift in West Australia were successfully controlled by growing the local blue lupin (*Lupinus varius*) mixed with a cereal crop.

Soil Erosion and Control. United States.

Forrester, Khyber. "Ice plant" holds hillsides - beautifies roadsides. Nation's Business 26(3):50, illus. March 1938.

"Ice plant - *Mesembryanthemum* - the Billion Dollar Plant - are only a few of the appellations of a plant, native to South Africa and California which hundreds of planting crews are now spreading throughout the milder climatic belts of the United States."

Also in Conservation 4(2):25. March/April 1938.

Hockley, H.A. and Walker, H., Jr. State action in 1937 for erosion control. U.S. Bur. Agr. Econ. Land Policy Circ., April 1938, pages 8-9.

Lists states in which soil conservation district laws and wind erosion acts were enacted during 1937.

Oklahoma and North Dakota provided for subventions to landowners engaging in specified conservation measures. South Carolina and Tennessee authorized public assistance in erosion control engineering operations. In these acts water erosion is given emphasis equal to, or greater than that placed on wind erosion.

Jordan, G.F. Lafayette county loses revenue but hopes to build it back. Mo. Ruralist 79:10, illus. Apr. 16, 1938.

"Erosion control not only saves soil - it can save farms for owners and losses of county revenue. All three results are what the Lafayette county (Mo.) court is trying to bring about in starting what is the first, or one of the first, county-sponsored erosion control contests in the United States."

Soil Microbiology

Thom, Charles. Microbiology. Jour. Wash. Acad. Sci. 28(4):137-153. Apr. 15, 1938.

Vandecaveye, S.C. and Baker, G.O. Microbial activities in soil: III. Activity of specific groups of microbes in different soils. Soil Sci. 45(4):315-333, illus. April 1938.

"References." pp. 332-333.

Melbourne silt loam and Palouse silt loam were selected for the experiments. Wheat straw, sweet clover hay, pine needles and coniferous forest duff were used in studying the course of organic residue formation.

Soil Moisture

Pessin, L.J. Effect of soil moisture on the rate of growth of long-leaf and slash pine seedlings. Plant Physiol. 13(1):179-189. January 1938.
Literature cited, pp. 188-189.

Veihmeyer, F.J. and Hendrickson, A.H. Soil moisture as an indication of root distribution in deciduous orchards. Plant Physiol. 13(1):169-177. January 1938.

Welton, F.A. and Wilson, J.D. Comparative rates of water loss from soil, turf, and water surfaces. Ohio Agr. Exp. Sta. Bimo. Bull. 23(190):13-16. Jan/Feb. 1938.

Table 1 gives relative rate of loss of moisture from different surfaces.

Soil Properties

Aquino, D.I. and Komkris, Thuan. A study of "single value" soil properties: moisture relationships, loss on ignition, sticky point and amount of clay. Philippine Agr. 26(7):568-579. December 1937.
"Literature cited," p. 579.

Soil Structure

Russell, E.W. The physical basis of soil structure. Sci. Prog. 32(128):660-676. April 1938.
"References," p. 676.

Stream Flow

Paulsen, C.G. Geological survey studies surface waters. Recent improvements in equipment aid in measuring stream flow. Civ. Engin. 8(4):247-250, illus. April 1938.

Expansion of address by author at eighth annual meeting, Mid-south section, American Society of Civil Engineers, Memphis, Tennessee, 1937.

Wind Erosion

Finnell, H.H. Research contributions to wind erosion control. Soil Conserv. 3(10):255-257, illus. April 1938.

Hood, G.W. Windbreaks help control erosion in the Great Plains. Soil Conserv. 3(10):247-249, 254, 257, illus. April 1938.

Terracing

Reynolds, F.S. Terraces pay dividends in the dust bowl. Farm and Ranch 57(8):5, illus. Apr. 15, 1938.

Tables give statistical results of the yield survey taken in the Dalhart, Dallam county, Texas, project area in the fall of 1937 to measure the effectiveness of the Soil Conservation practices, such as terracing and contouring, on crop yields.

Water Conservation

Otis, A.G. Plains country alfalfa. Capper's Farmer 49(4):30, illus. April 1938.

A Cheyenne county, Kansas farmer has been successful in growing alfalfa by means of spreader dams, terraces and shallow diversion ditches which provide automatic distribution of runoff and an extra supply of moisture.

BOOK AND PAMPHLET NOTES AND ABSTRACTS

Antevs, Ernst. Rainfall and tree growth in the Great basin. 97pp., illus. Published jointly by Carnegie institution of Washington and the American geophysical society of New York. [Baltimore, Lord Baltimore press] 1938. 463.84 An8

Carnegie institution of Washington. Publication no. 469; American geographical society. Special publication no. 21.

"List of references," pp. [89]-91.

Barnes, S. Soil moisture and crop production under dry land conditions in western Canada. Canad. Dept. Agr. Farmers' Bull. 46. 43pp., illus. Ottawa, January 1938. 7 C16F

Issued by Soil research laboratory, Dominion experimental station, Swift Current, Sask. Experimental farms branch. Publication 595, Bulletin 130 revised.

"References" on soil moisture, pp. 41-43.

Baylor, J.W. Saving soil and water; a popularly written combination text and work book for students and adults. A units work in soil and water conservation. 88pp. [Spokane, Washington, Printed by Union printing co., c1937] 56.7 B34

"Materials for reading and research," pp. 68-81.

"Glossary of terms common in soil conservation study," pp. 82-83.

Brown, H.P. Trees of northeastern United States, native and naturalized. rev. and enl. ed., 490 pp., illus. Boston, The Christopher publishing house, [c1938] 455.2 B81

"This text has resulted from the revision of Technical Publication no. 15 of the New York State College of Forestry, Syracuse, N.Y. which appeared in February 1921, under the title of 'Trees of New York State, Native and Naturalized.'"

Jacks, G.V. and Whyte, R.O. Erosion and soil conservation. Imp.Bur.
Pastures and Forage Crops. Herbage Pub. Ser. Bull. 25. 206pp.
Aberystwith, March 1938. 64.8 Im7

Also Imperial bureau of soil science. Technical communication no. 36.
References at end of each chapter.

"In compiling this account of contemporary soil erosion we have had the active co-operation of our Official correspondents and other workers throughout the world. From these sources we have received valuable and often otherwise inaccessible information...

"The paper has aimed at describing the present position with regard to erosion in the most seriously affected countries, the causes that have brought erosion into being, and the measures that are being taken or are contemplated to eliminate the causes and mitigate their effects... We have included every country about which information was available, but for certain countries, notably in South America and Africa, no suitable studies on erosion have been published... We have also passed over certain western European States where torrent and erosion control are matters of local rather than national concern..." . Preface.

The arrangement is geographical and the following countries are included: Italy, Cyprus, Turkey, Palestine, U.S.S.R., India, Ceylon, British Malaya, Netherlands East Indies, Philippine Islands, Siam, China, Japan, South Africa, Rhodesia, Tanganyika, Kenya, Uganda, Nyasaland, British Somaliland, Nigeria, Gold Coast and Sierra Leone, United States, Canada, Jamaica, Puerto Rico, Windward Islands, Leeward Islands, Trinidad, Australia and Fiji.

North Carolina state planning board. A planning report on water resources of North Carolina. 170 numb. l., illus. Raleigh, October 1937. 280.7 N819

Lettered on cover: Report on water resources 1937.

The report reviews the general conditions obtaining in each of the major fields of water use, gives detailed information concerning each drainage basin, and concludes with a summary statement of needs and recommendations for action to be taken and policies to be adopted.

Oliva, Alberto. Le sistemazioni idraulico-agrarie dei terreni asciutti di pianura, collina e montagna. (Hydraulic-agrarian improvement of dry lands, plains, hills and mountains). 356pp., illus. Firenze, S.A.G. Barbera Editore, 1938. 282 B47 v.5, pt.4.

In Italian.

English summary pp. 327-328 as follows: "Soil erosion has assumed serious proportions in Italy owing to the prevalent hilly and mountainous character of the territory, to the extension of Miocene and Pliocene clays and Eocene sand, also to the violent rainfall with frequent cloud-bursts.

"Since very early times the requirements of Italian agriculture have necessitated the taking of measures against erosion. This explains the evolution in Italy of a special technique by means of which the more serious effects of the erosion have been successfully checked or at least mitigated.

"During the last half century the technique of the measures for prevention of soil erosion made further progress in the direction of conservation and utilization of some part of the rain water for the benefit of the crops during periods of drought, that is to say, by

establishing what the author calls 'water economy'. Surprising results have been achieved by this technique especially on the Tuscan hillsides between Florence, Pisa and Siena.

"The protection of the soil against rain-water and its utilization for the benefit of crops is called hydraulic and agricultural soil regulation or simply 'regulation'.

"An excellent literature on soil regulation exists in Italy, some of the most eminent authors being C. Ridolfi, V. Niccoli, L. Sabbatini, G. Garavini. Prof. A. Oliva, Dean of the Faculty of Agriculture at the Royal University of Florence has now however illustrated with scientific precision and much practical sense all Italian methods of agricultural land regulation on plains, hillsides, and mountains. This illustration of the various methods has been preceded by an original study of the correlations between soil regulation on one part and hydraulic works, rainfall, ditch capacity per hectare, ditches concerning more than one farm (*consorziali*) and means of soil fertilization (irrigation water, soil works and manures) on the other. Hill-side soil regulation methods have been dealt with in a particular manner in order to illustrate for each geological formation (primary, secondary and tertiary rocks, Miocene and Pliocene clays, Pliocene sands) the corresponding regulation works.

"The author has illustrated the 'united surface regulation' (*'sistemazione unita'*), adapted to clayey hillsides, and its various phases: the modelling of the surface by means of 'hillfoot and hill-side raising' (*colmate di 'fondo' e di 'collina'*): the stanching and conduction of waters by means of horizontal ditches resembling contours (termed *'a girapoggio'*) and angular ones resembling fish-bones (termed *'a spina'*); the manner of conducting water from the higher ditches to the lower ones by means of 'regulators' and small reservoirs (*'bottacci'*) in which water can silt. Of all these works we have beautiful examples between Florence and Siena.

"The author has also illustrated the world-famous terracing method of soil regulation, adapted to rocky compact soils, of which there are splendid examples on the Italian Riviera between Rapallo and St. Remo, on Lake Maggiore from Belgirate to Stresa, in Sicily from Messina to Syracuse. The Italian characteristics of the method are also indicated.

"Then follows an illustration of the particular terracing method in which the wall is substituted by a bank of turf; this method is called turf-terracing (*'ciglionamento'*) and is widely adopted in the sandy soils surrounding Siena, where it gives rise to the unmistakable tone of the background of that town.

"The author also deals with the land regulation methods of the dry plains in Northern Italy, both those situated above the sea level, where according to him, soil regulation is responsible for the very high wheat yields of 75 to 100 bushels per acre, and those situated from 50 to 100 centimetres below the sea level where land regulation is the only means of rendering ordinary cultivation possible.

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The erosion problem,contributing factors and plans for control are discussed from the standpoint of various soil types found in the state.

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Contribution from Section of Soil and Water Conservation Experiment Stations, Division of Research, Soil Conservation Service and Texas Agricultural Experiment Station, cooperating in research.

Includes information on methods of measuring rainfall, run-off and erosion; effect of types of plant cover, slope characteristics and various soils on run-off and erosion; effect of tillage and cultivation practices of erosion; effect of contour strip cropping on run-off and erosion; design, construction and maintenance of terraces; run-off and erosion from watersheds of various characteristics.

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McDonald, Angus. Erosion and its control in Oklahoma territory. U.S. Dept. Agr. Misc. Pub. 301. 48pp., illus. Washington, U.S. Govt. print. off., March 1938. 1 Ag 84M no. 301
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Historical background, wind erosion and its control by use of vegetation, such as cover crops, including grass, alfalfa, cowpeas and sweet clover; dead covers; windbreaks; mechanical controls; the Campbell system of dry farming; plowing; listing; disking; water erosion, cause and extent; cover crops, Bermuda grass; agronomic and engineering practices; terracing; gully control, and ponds.

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Methods and costs of sowing seed, grazing treatment, response of species and suggested needs for further research are included in the discussion.

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